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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,467	12/26/2001	Kazumi Koike	KP-9149	2972
466	7590	07/12/2005	EXAMINER	
YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			WORKU, NEGUSSIE	
			ART UNIT	PAPER NUMBER
			2626	

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/025,467

Applicant(s)

KOIKE, KAZUMI

Examiner

Negussie Worku

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 is/are allowed.
- 6) ☒ Claim(s) 8 is/are rejected.
- 7) ☒ Claim(s) 9-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/26/01 12-26-01

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 8 is rejected under 35 U.S.C. 102(e) as being anticipated by Matama (USP 6,853,400).

With regard to claim 8, Matama teaches or discloses an image data correction method (88(92) of fig 4) for correcting image data picked up from an original image photographed in an exposure frame on a photographic film (film 68 of fig 1) through a taking lens (lens 76 of fig 1) while holding the exposure frame (image frame at the photographic film 68 of fig 1), curved along a direction to be concave toward the taking lens, (lens 76 of fig 1), so as to eliminate image distortion in the original image, (film 68 of fig 1), said image data correction method, see (fig 88(92) of fig 4), comprising the steps of: obtaining a correlation between actual locations and ideal locations of respective pixels of the image data on the original image by calculating an actual location of each pixel on the basis of an ideal location of said pixel and correction parameters, (as seen in fig 4, x, y coordinates of output scan address of fig 4, as the

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actual location of pixel of the image to be scanned) said ideal location corresponding to an ideal image point of said pixel formed on a flat exposure frame (the input scan address of image of fig 4, the ideal location of pixel image which is correction by distortion section unit 104 of fig 4), the ideal location through an ideal taking lens (lens 76 of fig 1) having no distortion, and said correction parameters (distortion correction parameters in putted to distortion correction unit 104 of fig 4) being predetermined in accordance with the distortion of the taking lens (lens 76 of fig 1) and the curvature of the exposure frame at the exposure (exposure frame 68 of fig 1); and rearranging the image data by transforming each pixel to its ideal location in accordance with said correlation, see (col.9, lines 15-35), and (col.10, lines 55-65).

Allowable Subject Matter

3. The following is a statement of reasons for the indication of allowable subject matter: With respect to claim 1-7, the prior art searched and of the record neither anticipates nor searched suggests setting up an orthogonal coordinate system having an origin at an intersection between an optical axis of the taking lens and the exposure frame, the X-axis of said coordinate system extending in the curved direction of the exposure frame, and the Y-axis of said coordinate system extending perpendicularly to the optical axis of the taking lens; approximating distortion in an image obtained by photographing straight-linear lines extending in the X-axis and Y-axis directions through the taking lens to circular arcs, wherein distortion in a first straight-linear line extending

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in the Y-axis direction is approximated to a circular arc which have a center of curvature on the X-axis and passing across an intersection of said first straight-linear line with the X-axis, and distortion in a second straight-linear line extending in the X-axis direction is approximated to a circular arc which have a center of curvature on the Y-axis and passing across an intersection of said second straight-linear line with the Y-axis, said circular arcs having different radii depending upon distances of said respective straight-linear lines from the origin; and rearranging the image data of respective pixels of the original image by transforming coordinates (x, y) of each pixel to coordinates (a, b) , wherein "a" represents an x-distance of an intersection between the X-axis and one of said approximating circular arcs that has its center on the X-axis and passes across said coordinates (x, y) , and "b" represents a y-distance of an intersection between the Y-axis and one of said approximating circular arcs that has its center on the Y-axis and passes across said coordinates (x, y) .

Claims objected to having Allowable subject matter

4. Claims 9-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Therefore, claims 9-11 are Allowed for the reason that the prior art searched and of the record neither anticipates nor suggests an image data correction method, wherein said actual and ideal locations of the respective pixels in the exposure frame are represented by coordinates of an orthogonal coordinate system having an origin at an

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intersection between an optical axis of the taking lens and the exposure frame, the X-axis of said coordinate system extending in the curved direction of the exposure frame, and the Y-axis of said coordinate system extending perpendicularly to the optical axis of the taking lens; and said correlation between said actual locations and said ideal locations are obtained by use of the following equations:

$$F_x = R_f \cdot \tan^{-1} \left\{ \frac{W_x}{(R_f - W_z)} \right\}; F_y = \frac{(L_c - W_z) \cdot D_y}{L_c}; D_x = P_x \cdot (1 + C_{\alpha} \cdot \sqrt{H_1^2 + C_{\beta} \cdot H_1 + C_{\gamma}} \cdot H_1);$$

$$D_y = P_y \cdot (1 - C_{\alpha} \cdot \sqrt{H_1^2 + C_{\beta} \cdot H_1 + C_{\gamma}} \cdot H_1); H_1 = \sqrt{(P_x^2 + P_y^2) \cdot W_x^2 / (N^2 - M^2 \cdot D_x^2) - M^2 \cdot L_c^2};$$

$$W_x = \frac{-D_x}{(M \cdot L_c)} \cdot \sqrt{(N^2 - M^2 \cdot D_x^2) - M^2 \cdot L_c^2}; W_z = \frac{N \cdot \sqrt{(N^2 - M^2 \cdot D_x^2) - M^2 \cdot L_c^2}}{M};$$

$$M = 1 + (D_x^2 / L_c^2); \text{ and } N = R_f + (D_x^2 / L_c),$$

wherein F_x and F_y represent an x-distance and a y-distance of said actual location of a pixel, P_x and P_y represent an x-distance and a y-distance of said ideal location of said pixel, C_{α} , C_{β} , C_{γ} represent said correction parameters predetermined in accordance with the distortion of the taking lens, R_f represents a radius of curvature of the exposure frame at the exposure, and L_c represents a distance of a center of exit pupil of the taking lens to the intersection between the optical axis of the taking lens and the exposure frame, R_f and L_c being said correction parameters predetermined in accordance with the curvature of the exposure frame at the exposure.

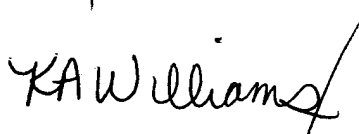
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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Negussie Worku whose telephone number is 571-272-7472. The examiner can normally be reached on 9am-6pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached on 571-272-7471. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Negussie Worku
Patent Examiner
Art unit 2626
June 30, 2005



KIMBERLY WILLIAMS
SUPERVISORY PATENT EXAMINER